## Practical use of drones in Agriculture

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2<sup>nd</sup> Educational Seminar on ICT in Agriculture -Mobile Applications, Robotics and Drones in Agriculture

Virtual - 6<sup>th</sup> October 2020





## Outline





### Flower blossom estimation



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### Yield estimation

- **Developed by Intel**
- Many pre-defined exported formats: COCO, LabelMe, MOT, PASCAL VOC, YOLO, segmentation task
- Advantages:

•

Collaborative – split tasks among team members

Tasks

Models

- Automatic annotation interpolation between key frames
- Semi automatic annotation using deeplearning models like Mask R-CNN, YOLO etc.
- Track instances across frames





## Tree height monitoring





# Plant breeding



# Plant breeding



# Plant breeding



### Software used: LabelMe (MIT, 2012)



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### Ripeness assessment











# Plant phenotyping



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### Welcome to the online plant phenotyping tool!

This deep learning based tool allows you to quickly determine the number of leaves for your dataset. To get started, upload your image(s) below. In order to upload multiple images and save your analysis history, please consider signing up.

To get started, upload your image(s) here



About us Deep learning algorithm by Valerio Giuffrida Supervision and guidance by Joao Valente Web application by Mihai Frangulea and Rajat Sharma

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# MOOC Drones for Agriculture: Prepare and Design Your Drone (UAV) Mission

Catalog > Data Analysis & Statistics Courses

#### Drones for Agriculture: Prepare and Design Your Drone (UAV) Mission

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- Module 2: Planning a mission and acquiring the data
- Module 3: From acquisition to visualisation

### 

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### Tue 6 October 2020 until Tue 23 February 2021

Tue 2 February 2021 until Tue 22 June 2021





